Attorney's Docket No.: 42.P18283

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	
Ioan Sauciuc, et al.	Examiner: Leonard J. Weinstein
Serial No. 10/749,359	Group Art Unit: 3746
Filed: December 30, 2003	Confirmation No. 1189
For: **METHOD AND APPARATUS FOR TWO-PHASE START-UP OPERATION**	

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Commissioner for Patents
P.O. Box 1450
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APPEAL BRIEF

Sir:

The Appellants submit the following Appeal Brief pursuant to 37 C.F.R. § 41.37(c) for consideration by the Board of Patent Appeals and Interferences. The Appellants authorize the amount of $540.00 to cover the cost of filing the opening brief as required by 37 C.F.R. § 1.17(f) to be charged to Deposit Account No. 02-2666.

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I. REAL PARTY IN INTEREST

Ioan Sauciuc and Gregory Chrysler, the named inventors of the application transferred their rights to the subject application through an assignment recorded on August 2, 2004 (Reel/Frame 015638/0015) in the patent application to Intel Corporation of Santa Clara, California. Thus, as the owner at the time the Brief is being filed, Intel Corporation is the real party in interest.

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences that will directly affect, be directly affected by or have a bearing on the Board's decision in this Appeal.

III. STATUS OF CLAIMS

Claims 6-7, 9-12, and 25-28 are currently pending, and claims 6-7, 9-12, and 25-28 are rejected in the Application. Claims 1-5, 8, 13, 15-17, and 19-24 have been withdrawn from consideration. Claims 14 and 18 have been cancelled. The Appellants respectfully appeal the rejections of claims 6-7, 9-12, and 25-28. Thus, the Appealed Claims are claims 6-7, 9-12, and 25-28.

IV. STATUS OF AMENDMENTS

Amendments were not submitted after the final Office Action mailed on June 1, 2009.

V. SUMMARY OF THE CLAIMED SUBJECT MATTER

Independent claim 6 recites a method comprising: (a) orienting a pump or compressor without regard to a gravitational location of a heat source coupled to the pump or compressor (see at least pump 110 or compressor 210 oriented as described and shown at paragraphs 4-7, 56 and 63 of the application; Fig. 1 showing liquid pump 110 located above heat source 170 with respect to gravity; Fig. 2 showing vapor compressor 210 located below heat source 270 with respect to gravity; and Figs. 4-5); (b) determining a presence of a threshold amount of fluid that is within the pump or compressor (see at least paragraphs 23-26; 66-69; Figs. 1-2, and Figs. 4-5, and block 720 of Fig. 7); and (c) condensing vapor of the fluid as it is present in the pump or evaporated liquid of the fluid as it is present in the compressor (see at least paragraphs 28, 34-35, 39-45, 51-53, 59-61 and Figs. 1-5, block 625 of Fig. 6 and block 725 of Fig. 7).

Dependent claim 12 (which depends from claims 6, 10, and 11) recites: (claim 10) the method of claim 6, further comprising; (d) repeating (b) and (c) until there is no longer a threshold amount of the fluid in the pump or compressor (see at least paragraphs 66-69 and 73; blocks 610-625 of Fig. 6 and blocks 710-725 of Fig. 7); (claim 11) the method of claim 10, further comprising (e) after (d) applying power to the pump or compressor (see at least paragraphs 56, 63, 65, 66, 68, 69-70 and blocks 640 and 740 of Figs. 6-7); (claim 12) the method of claim 11, wherein the heat source is a first source, and further comprising: (f) applying power to a second heat source coupled to the pump or compressor (see at least feature 230 of Fig. 2 and paragraph 35; feature 510 of Fig. 5 and paragraph 63; and block 725 of Fig. 7 and paragraph 73 of the application).

Dependent claim 26 (which depends from claims 6) recites the method of claim 6, wherein determining comprises checking a sensor coupled to the pump or compressor (see at least block 610 of Fig. 6 and paragraph 65; block 710 of Fig. 7 and paragraph 72); wherein condensing comprises cooling vapor with a liquid pump to a condensation point by a thermal electric cooler (see at least feature 300 of Figure 3 and paragraph 39); and further comprising: turning off the sensor and the thermoelectric cooler (see at least paragraphs 67 and 69 of the application); then turning on the pump (see at least paragraphs 67 and 69 of the application).

Dependent claim 28 (which depends from claims 6) recites the method of claim 6, wherein the fluid is within the compressor and the compressor is a vapor compressor to force vapor through a system (see at least paragraphs 2, 5, 16, 32, 54, 62 and 69 and Fig. 7).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Whether claims 6, 7, 10-12, 25 and 27-28 are rejected under 35 U.S.C. § 102(e) as being anticipated by Goodson. Whether claims 6 and 9 are rejected under 35 U.S.C. § 102(b) as being anticipated by Eastman. Whether claim 26 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Eastman in view of Sauciuc.

All of the claims do not stand or fall together. The basis for the separate patentability of the claims is set forth below under each separate claim heading.

VII. ARGUMENT

A. Overview of the Cited References

1. Goodson

Goodson teaches an electroosmotic pump that is able to recapture evolved gas and deposited materials to provide for long term closed loop operation (see paragraph 27), such as by using a catalytic recombiner having a catalyst to recombine hydrogen gas and oxygen gas that floats or rises up to the catalyst (see paragraphs 81, 83 and 175). Thus, oxygen bubbles generated at an electrode are driven by buoyancy forces, and hydrogen bubbles are also driven up into recombining chamber 312 by buoyancy to recombine to form water (see paragraph 83). Consequently, although channels 328 are positioned circumferally around the pumping structure to allow gas access from cathode chamber 312a into chamber 312b, such that hydrogen gas does not get trapped within chamber 312a when pump 300 is oriented at a tilt with respect to gravity, it is a principle of operation of Goodson that pump 300 must be oriented so that the oxygen and hydrogen bubbles are able to float upwards into a recombiner (e.g. recombiner 326) to be recombined (see paragraphs 81-83, 142, 164 and 174-177; FIGs. 2, 9B, 10-11, and 15). Goodson, paragraph 177 requires heater 330 to keep recombiner 326 warm at all times, or pulse/heat recombiner 326, or that heater 332 may be used to restore the performance of recombiner 326 if the recombiner becomes wet or needs rejuvenated.

2. Eastman

Eastman teaches a liquid condensation device that works regardless of the absence of gravity (see column 1, lines 27-35). Thus, the primary purpose of Eastman is to build a liquid collection device that feeds liquid condensation to a pump to facilitate the collection of liquid condensed from vapor in gravity free satellite system applications, where collection is required without the aid of gravity (see column 1, lines 33-36 and 67-68; and independent claims 1, 10 and 11). Eastman requires the absence of gravity (Id.).

3. Sauciuc

Sauciuc teaches that orientation, gravitational forces, and the level of liquid coolant 30 are factors dictating the operation of apparatus 10 (see Sauciuc abstract, "gravity" vector shown in Figs. 1-3; and paragraphs 24, 26 and 30).

B. Rejection of Claims 6, 7, 10-12, 25 and 27-28 under 35 U.S.C. §102(e) as being anticipated over US Patent Application Publication No. 2003/0062149 to Goodson et al. ("Goodson").

It is axiomatic that to be anticipated every limitation of a claim must be disclosed in a single reference.

Independent Claim 6

Appellants disagree with the rejection above of claim 6 for at least the reason that the references do not disclose "orienting a pump or a compressor without regard to a gravitational location of a heat source coupled to the pump or compressor; determining a presence of a threshold amount of fluid that is within a pump or a compressor; and condensing vapor of the fluid as it is present in the pump or evaporating liquid of the fluid as it is present in the compressor", as required by amended claim 6.

Embodiments described in the specification of the present application, without limitation thereto, describe orienting a pump or a compressor without regard to a gravitational location of a heat source coupled to the pump or compressor; determining a presence of a threshold amount of fluid within pump 110 or compressor 210; and condensing vapor of the fluid as it is present in pump 110 or evaporating liquid of the fluid as it is present in compressor 210 (see FIGs. 1-2 and 4-5 of the application).

Goodson teaches an electroosmotic pump that is able to recapture evolved gas and deposited materials to provide for long term closed loop operation (see paragraph 27), such as by using a catalytic recombiner having a catalyst to recombine hydrogen gas and oxygen gas that floats or rises up to the catalyst (see paragraphs 81, 83 and 175). Thus, oxygen bubbles generated at an electrode are driven by buoyancy forces, and hydrogen bubbles are also driven up into recombining chamber 312 by buoyancy to recombine to form water (see paragraph 83). Consequently, although channels 328 are positioned circumferally around the pumping structure to allow gas access from cathode chamber 312a into chamber 312b, such that hydrogen gas does

not get trapped within chamber 312a when pump 300 is oriented at a tilt with respect to gravity, it is a principle of operation of Goodson that pump 300 must be oriented so that the oxygen and hydrogen bubbles are able to float upwards into a recombiner (e.g. recombiner 326) to be recombined (see paragraphs 81-83, 142, 164 and 174-177; FIGs. 2, 9B, 10-11, and 15).

In addition, Goodson teaches the principle of operation of restraining hydrogen gas from passing through the cooling loop, such as would occur if pump 300 were oriented without regard to a gravitational location of a heat source (see paragraph 173-174).

However, Goodson does not disclose "orienting a pump or a compressor without regard to a gravitational location of a heat source coupled to the pump or compressor; determining a presence of a threshold amount of fluid that is within a pump or a compressor; and condensing vapor of the fluid as it is present in the pump or evaporating liquid of the fluid as it is present in the compressor", as required by claim 6.

In item 8a of the current Office Action (FOA mailed 06/01/09) the Patent Office argues that a reference requiring a pump or compressor be located without regard to a heat source, and subsequently be located depending on the location reads on the claims. Applicant asserts that this is an unreasonable and illogical interpretation of the rule of anticipation. Specifically, the current claims require "orienting a pump or a compressor without regard to a gravitational location of a heat source coupled to the pump or compressor". The Examiner states that any method of locating the pump/compressor without regard to the heat source, and a subsequent step including locating the heat source depending on the location of the pump/compressor reads on the claim (FOA mailed 06/01/09 p. 5, lines 3-10). However, logic precludes these double locating steps from excluding the "locating…depending" step. Otherwise, according to the Patent Office's logic, any reference would read upon Applicant's claims. Therefore, the Patent office's interpretation of the claims is unreasonable as it ignores limitations required by claim 6.

Hence, for at least the reasons above, Appellants respectfully request the Board overturn the rejection above of claims 6, 7, 10-12, 25 and 27-28.

Dependent Claim 12

In addition to being dependent upon allowable claim 6 Appellants disagree with the rejection of claim 12 (which depends from claims 6, 10, and 11) for at least the reason that Goodson does not disclose: (claim 10) the method of claim 6, further comprising; (d) repeating (b) and (c) until there is no longer a threshold amount of the fluid in the pump or compressor;

(claim 11) the method of claim 10, further comprising (e) after (d) applying power to the pump or compressor; and (claim 12) the method of claim 11, wherein the heat source is a first source, and further comprising: (f) applying power to a second heat source coupled to the pump or compressor, as required by claim 12.

In item 3 the Patent Office asserts that Goodson anticipates claim 12 and its interceding claims based on paragraph 177. However, paragraph 177 requires heater 330 to keep recombiner 326 warm at all times, or pulse/heat recombiner 326, or that heater 332 may be used to restore the performance of recombiner 326 if the recombiner becomes wet or needs rejuvenated. However, this does not describe applying power to the pump or compressor after there is no longer a threshold amount of fluid in the pump or compressor, and applying power to a second heating source, as required by claim 12.

Hence, for at least the additional reasons above, Appellants respectfully request the Board overturn the rejection above of claim 12.

Dependent Claim 28

In addition to being dependent upon allowable claim 6 Appellants disagree with the rejection of claim 28 for at least the reason that Goodson does not disclose that the fluid is within a compressor and the compressor is a vapor compressor to force the vapor through a system, as required by claim 28.

In item 8b of the current Office Action the Patent Office asserts that paragraph 173 of Goodson teaches permitting gas to flow through the system and infers that it is advantageous to permit the gas to flow. Appellants respectfully disagree as paragraph 132 requires that the gas generated in the process "must be managed" but can be tolerated for systems that are only used some of the time." Thus, upon reading this description, a practitioner would not consider it advantageous to use a vapor compressor to force vapor through a system, as require by claim 28, but instead would identify the gas as a nuisance, such as by being allowed to escape fro certain systems.

In addition, by teaching the principle of operation of restraining hydrogen gas from passing through the cooling loop, Goodson teaches against having gas bubbles or vapor within the cooling lines (see paragraph 173, lines 14-19 and paragraph 174, lines 7-11). Consequently, Goodson cannot teach and does not describe the above noted limitations of claim 28.

Hence, for at least the additional reasons above, Appellants respectfully request the Board

overturn the rejection above of claim 28.

C. **Rejection of Claims 6 and 9 under 35 U.S.C. §102(b) as being anticipated by US Patent No. 4,547,130 to Eastman et al. ("Eastman").**

Independent Claim 6

Appellants note that Eastman also fails to teach or disclose the above noted limitations of independent claim 6. Eastman teaches a liquid condensation device that works regardless of the absence of gravity (see column 1, lines 27-35). Thus, the primary purpose of Eastman is to build a liquid collection device that feeds liquid condensation to a pump to facilitate the collection of liquid condensed from vapor in gravity free satellite system applications, where collection is required without the aid of gravity (see column 1, lines 33-36 and 67-68; and independent claims 1, 10 and 11). Consequently, Eastman teaches away from orienting without regard to a gravitational location as claimed in claim 6, by requiring the absence of gravity.

At item 4 of the current Office Action the Patent Office asserts that Eastman teaches orienting a pump or compressor without regard to a gravitational location of a heat source coupled to a pump or compressor, as required by claim 6. However, Eastman only teaches operating successfully in a gravitiationless atmosphere. Hence, Eastman cannot disclose a limitation requiring a "gravitational location", as required by claim 6.

Next, in item 9 of the current Office Action the Patent Office asserts that the teaching of the absence of gravity in Eastman allows Eastman to read on Appellant's claim 6 requirements of orienting a pump or compressor without regard to a gravitational location of a heat source. Appellants disagree as the claim requires the existence of a gravitational location and relationship between the pump or compressor and the heat source (orienting without regard to a gravitational location is a relationship that requires the existence and influence of gravity), while such requirement is impossible in Eastman. Thus, the Patent Office's interpretation of the claims is unreasonable as it ignores claim limitations noted above.

Hence, for at least the reasons above, Appellants respectfully request the Board overturn the rejection above of claims 6 and 9.

D. **Rejection of Claim 26 under 35 U.S.C. §103(a) as being unpatentable over Eastman in view of US Patent Application Publication No. 2003/0205364 to Sauciuc et al. ("Sauciuc").**

Appellants reserve the right to attribute any invention disclosed but not claimed in

Sauciuc, in accordance with MPEP § 716.10.

For a claim to be obvious, every limitation of that claim must be taught by at least one properly combined reference.

Dependent Claim 26

In addition to being dependent upon allowable claim 6 Appellants disagree with the rejection of claim 26 for at least the reason that the cited references do not teach wherein determining comprises checking a sensor coupled to the pump or compressor; wherein condensing comprises cooling vapor with a liquid pump to a condensation point by a thermal electric cooler; and further comprising: turning off the sensor and the thermoelectric cooler, as required by claim 26.

For example, by including the claimed orienting a pump or a compressor without regard to a gravitational location of a heat source coupled to the pump or compressor; and checking a sensor coupled to the pump or compressor; wherein condensing comprises cooling vapor with a liquid pump to a condensation point, embodiments described in the specification of the present application, for example, without limitation thereto, provide the unexpected benefits of overcoming the problems generally associated with the orientation of pumps or compressors within a system (see at least paragraphs [0004]-[0007], [0056] and [0063] of the application; FIG. 1 showing a liquid pump located above a heat source of the system with respect to gravity). However, the cited references do not describe the claim limitations noted above, or any of these resulting benefits.

Hence, for at least the additional reasons above, Appellants respectfully request the Board overturn the rejection above of claim 26.

Accordingly, it is submitted that the rejections of claims 6-7, 9-12 and 25-28 based on 35 U.S.C. § 103(a) be overturned.

Respectfully submitted,

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Dated: 7/1/09

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CERTIFICATE OF TRANSMISSION

I hereby certify that this correspondence is being submitted electronically via EFS Web to the United States Patent and Trademark Office.

Nedy Caldeon 7/1/09

Nedy Caldeon Date

VIII. CLAIMS APPENDIX

1. (Withdrawn)

2. (Withdrawn)

3. (Withdrawn)

4. (Withdrawn)

5. (Withdrawn)

6. (Previously Presented) A method, comprising:

(a) orienting a pump or a compressor without regard to a gravitational location of a heat source coupled to the pump or compressor;

(b) determining a presence of a threshold amount of a fluid that is within the pump or the compressor; and

(c) condensing vapor of the fluid as it is present in the pump or evaporating liquid of the fluid as it is present in the compressor.

7. (Previously Presented) The method of claim 6, wherein determining comprises:
checking a sensor coupled to the pump or compressor.

8. (Withdrawn)

9. (Previously Presented) The method of claim 6, wherein condensing comprises:
cooling vapor within a liquid pump to a condensation point by a thermoelectric cooler.

10. (Previously Presented) The method of claim 6, further comprising:

(d) repeating (b) and (c) until there is no longer a threshold amount of the fluid in the pump or compressor.

11. (Previously Presented) The method of claim 10, further comprising:

(e) after (d), applying power to the pump or compressor.

12. (Previously Presented) The method of claim 11, wherein the heat source is a first source, and further comprising:

(f) applying power to a second heat source coupled to the pump or compressor.

13. (Withdrawn)

14. (Canceled)

15. (Withdrawn)

16. (Withdrawn)

17. (Withdrawn)

18. (Canceled)

19. (Withdrawn)

20. (Withdrawn)

21. (Withdrawn)

22. (Withdrawn)

23. (Withdrawn)

24. (Withdrawn)

25. (Previously Presented) The method of claim 6, further comprising:

powering on the pump after condensing, or powering on the compressor after evaporating.

26. (Previously Presented) The method of claim 6, wherein determining comprises checking a sensor coupled to the pump or compressor; wherein condensing comprises cooling vapor within a liquid pump to a condensation point by a thermal electric cooler; and further comprising:

turning off the sensor and the thermal electric cooler; then

turning on the pump.

27. (Previously Presented) The method of claim 6, wherein the fluid is within the pump and the pump is a liquid pump to force liquid through a system.

28. (Previously Presented) The method of claim 6, wherein the fluid is within the compressor and the compressor is a vapor compressor to force vapor through a system.

IX. EVIDENCE APPENDIX

No evidence is submitted with this appeal.

X. RELATED PROCEEDINGS APPENDIX

No related proceedings exist.